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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/674,728 | 09/30/2003 | Juha Hakkinen | KOLS.059PA | 3970 |

7590 07/28/2006

Hollingsworth & Funk, LLC
Suite 125
8009 34th Avenue South
Minneapolis, MN 55425

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| EXAMINER |
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HAROON, ADEEL

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| ART UNIT | PAPER NUMBER |
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2618

DATE MAILED: 07/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/674,728

Applicant(s)

HAKKINEN ET AL.

Examiner

Adeel Haroon

Art Unit

2618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-14 and 16-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-14 and 16-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This Office Action is in response to Amendment filed on date: 5/26/06.

Claims 2-14 and 16-29 are still pending.

Response to Arguments

2. Applicant's arguments filed 5/26/06 have been fully considered but they are not persuasive.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "The frequency of Pekkarinen's down converted diagnostic signal 24 is higher than the claimed BB frequency and therefore does not correspond to the claimed BB output signal) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Since Pekkarinen discloses the use of a "baseband filter" for the signal 24, the signal 24 is a BB frequency signal as claimed by the applicant (Column 5, lines 17-20).

In response to applicant's argument that a standardized boundary scan test structure as taught by the IEEE articles provided by the applicant cannot be bodily incorporated to Pekkarinen, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2-12, 16-26, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pekkarinen et al. (U.S. 6,321,071) in view of "IEEE Standard For A Mixed Signal Test Bus"(hereinafter IEEE article) provided by the applicant.

With respect to claims 2, 3, and 9, Pekkarinen et al. disclose a method of testing a RF circuit device of a telecommunications system (Column 1, lines 6-11). Pekkarinen

Art Unit: 2618

et al. teach providing the RF circuit, the transmitter, to be tested with an input test signal, thus generating an RF output test signal characterizing the response of the RF circuit (Column 4, lines 11-23). Pekkarinen et al. also disclose down-converting the RF output test signal using element number 22, which is integrated into the RF circuit, generating a BB output test signal (Column 4, lines 26-36 and Column 4, lines 5-7). Pekkarinen et al. do not specifically teach using standardized boundary scan test structure. However, the IEEE article discloses using a standardized boundary scan test structure to access, probe, and test RF circuits such as a transmitter (Page 35). Therefore, it would be obvious to one of ordinary skill in the art at the time of the applicant's invention to use a standardized boundary scan test structure in the method of Pekkarinen et al. "in order to reduce both test development time and testing costs and to improve testing quality" (IEEE, Introduction page iii).

With respect to claim 4, Pekkarinen et al. further disclose mixing the RF output test signal with a pre-defined reference frequency from element number 12, thus generating an IF output test signal (Column 4, lines 26-36). Since this signal is a baseband signal before entering filter 29 (Column 5, lines 18-20), the IF output test signal must be converted BB output test signal in an analog format.

With respect to claim 5, Pekkarinen et al. teach using a Digital Signal Processor, element number 26, to process the BB output test signal; therefore, the analog BB signal must be AD converted into a digital format in order to be processed by the DSP (Column 4, lines 32-34).

With respect to claim 6, Pekkarinen et al. teach generating a BB input test signal, from element number 6, and up-converting the BB input test with element number 4 into a radio frequency (Column 4, lines 11-23).

With respect to claims 7 and 8, the elements 6 and 22 are interpreted as being in an Analog Boundary Module (Column 4, lines 11-23).

With respect to claim 10, Pekkarinen et al. disclose a test control circuitry, element number 8 (Column 4, lines 11-23).

With respect to claim 11, Pekkarinen et al. teach determining the response of the RF circuit to the RF input test signal by using the BB output test signal with element number 26 (Column 4, lines 32-34).

With respect to claim 12, Pekkarinen et al. teach using this method as a diagnostic test of the wireless communication device (Column 1, lines 40-51), but do not expressly teach communicating the test result to a production line producing the wireless device. However, it would be obvious to one of ordinary skill in the art to communicate the test results to a production line in order to inform the production line of the problems ascertained from the test results.

With respect to claim 16 and 29, Pekkarinen et al. disclose an arrangement for testing a RF circuit device of a telecommunications system (Column 1, lines 6-11). Pekkarinen et al. teach providing the RF circuit, the transmitter, to be tested with an input test signal, thus generating an RF output test signal characterizing the response of the RF circuit (Column 4, lines 11-23). Pekkarinen et al. also disclose down-converting the RF output test signal using element number 22, which is integrated into the RF

circuit (Column 4, lines 26-36 and Column 4, lines 5-7). Pekkarinen et al. disclose a first accessing means with element numbers 8 and 28 connected to the down-converting means with element number 12 to probe the RF output test signal (Column 4, lines 59-67) but do not specifically disclose using a standardized boundary scan test structure. However, the IEEE article discloses using a standardized boundary scan test structure to access, probe, and test RF circuits such as a transmitter (Page 35). Therefore, it would be obvious to one of ordinary skill in the art at the time of the applicant's invention to use a standardized boundary scan test structure in the method of Pekkarinen et al. "in order to reduce both test development time and testing costs and to improve testing quality" (IEEE, Introduction page iii).

With respect to claim 17, Pekkarinen et al. disclose a second accessing means with element numbers 8 and 28 connected to the providing means to provide the input test signal for the RF circuit (Column 4, lines 6-23).

With respect to claim 18, Pekkarinen et al. further disclose mixing the RF output test signal with a pre-defined reference frequency from element number 12, thus generating an IF output test signal (Column 4, lines 26-36). Since this signal is a baseband signal before entering filter 29 (Column 5, lines 18-20), the IF output test signal must be converted BB output test signal in an analog format.

With respect to claim 19, Pekkarinen et al. teach using a Digital Signal Processor, element number 26, to process the BB output test signal; therefore, the analog BB signal must be AD converted into a digital format in order to be processed by the DSP (Column 4, lines 32-34).

With respect to claim 20, Pekkarinen et al. teach generating a BB input test signal, from element number 6, and up-converting the BB input test with element number 4 into a radio frequency (Column 4, lines 11-23).

With respect to claims 21 and 22, the elements 6 and 22 are interpreted as being in an Analog Boundary Module (Column 4, lines 11-23).

With respect to claims 23 and 24, Pekkarinen et al. disclose a test control circuitry, element number 8 (Column 4, lines 11-23).

With respect to claim 25, Pekkarinen et al. teach determining the response of the RF circuit to the RF input test signal by using the BB output test signal with element number 26 (Column 4, lines 32-34).

With respect to claim 26, Pekkarinen et al. teach using this arrangement as a diagnostic test of the wireless communication device (Column 1, lines 40-51), but do not expressly teach communicating the test result to a production line producing the wireless device. However, it would be obvious to one of ordinary skill in the art to communicate the test results to a production line in order to inform the production line of the problems ascertained from the test results.

5. Claims 13, 14, 27, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pekkarinen et al. and IEEE article further in view of Liu et al. (U.S. 2004/0203467).

With respect to claims 13, 14, 27, and 2, the modified method of Pekkarinen et al. and IEEE article is described above. Pekkarinen et al. does not disclose testing the digital circuit and BB analog circuit. However, Liu et al. disclose method of testing portable communication devices thus making it analogous art since it is in the same field of endeavor. Liu et al. teach testing different parts of the wireless device including digital circuit and analog circuits, elements 101-104 (Paragraph 19). Therefore, it would be obvious to one of ordinary skill in the art at the time of the applicant's invention to test the digital circuits and analog circuits as taught by Liu et al. as part of the modified method in order to have a more complete and thorough testing of the wireless communication device.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

Art Unit: 2618

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adeel Haroon whose telephone number is (571) 272-7405. The examiner can normally be reached on Monday thru Friday, 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on (571) 272-7882. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AH
7/17/06

Nguyen Vo
7-19-2006

NGUYENT.VO
PRIMARY EXAMINER